Before the

Maryland Public Service Commission

Case No. 8980

Testimony

of

Bruce Bleiweis

on Behalf of

Reliant Resources, Inc.

December 5, 2003

TESTIMONY OF BRUCE BLEIWEIS
ON BEHALF OF RELIANT RESOURCES, INC.

I. INTRODUCTION

Q: PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

A: My name is Bruce Bleiweis. I am Director of Asset Commercialization for Reliant Resources, Inc. ("Reliant"). My business address is 70 West Red Oak Lane, White Plains, New York 10604. My education and professional qualifications are set forth below.

Q: WHAT ARE YOUR RESPONSIBILITIES IN YOUR ROLE AS DIRECTOR OF ASSET COMMERCIALIZATION?

A: My responsibilities include assisting in developing Reliant's national regulatory strategy and implementing such policy specifically in the Northeast. I also represent Reliant on numerous PJM Committees, the Executive Committee of the Northeast Power Coordinating Council and on regulatory issues in New York and other regions as appropriate. This includes working with FERC staff and Commissioners as well as State Commission and Legislative personnel throughout the Northeast.

Q: PLEASE DESCRIBE YOUR PROFESSIONAL AND EDUCATIONAL BACKGROUND AND EXPERIENCE.

A: I joined Reliant in May 2000. Prior to joining Reliant, I worked at Sithe Energies and PacifiCorp Power Marketing, Inc. between February 1996 and May 2000. My responsibilities included various wholesale and retail commercial assignments as well as development assignments. I was also very active in the regulatory realm of the three Northeast Independent System Operators.

I began my career at the New York Power Authority followed by the Consolidated Edison Company of New York, Inc. I worked for more than fifteen years in various commercial and technical areas for these utilities, including New York Power Pool operational and economic dispatch development matters.

I received a Bachelor of Science in Engineering degree from the Moore School of Electrical Engineering at the University of Pennsylvania in 1977. I also received a Masters of Business Administration in Finance from the Lubin School at Pace University in 1986.

Q: WHAT IS THE PURPOSE OF THE TESTIMONY YOU ARE PRESENTING IN THIS CASE?

A: My testimony provides information to assist this Commission in determining appropriate steps to ensure improvements to the resource adequacy model utilized in PJM. To accomplish this I describe a reasonable market-based, forward-looking approach to resource adequacy referred to as Regional Reliability Commitment ("RRC") that Reliant has recommended to various entities, including the PJM Interconnection LLC ("PJM"). Finally I suggest the best way for the Commission to ensure resource adequacy in Maryland would be to actively support the RRC in the PJM meetings currently discussing such matters.

II. SUMMARY

Q: PLEASE SUMMARIZE YOUR CONCLUSIONS.

A: The RRC model is a robust, reasonable forward-looking method to ensure resource adequacy. A properly designed resource adequacy model can provide market participants the needed assurance that there will be sufficient resources available to meet load growth in order to maintain an acceptable level of reliability in the future. The RRC accomplishes this by being forward-looking, using market-based methods to procure existing and new capacity, and appropriately allocating the cost of resource adequacy. These design features are generally similar to those made by the Mid-Atlantic Conference of Regulatory Utilities Commissioners ("MACRUC") in their January 10, 2003, comments to FERC regarding resource adequacy. I will discuss the RRC model as well as the current PJM capacity market in detail below.

III. A ROBUST REASONABLE RESOURCE ADEQUACY PROPOSAL

Q: PLEASE DESCRIBE THE RRC MODEL.

A: The RRC incorporates a centralized-procurement approach. Properly designed capacity markets require a forward commitment of capacity based on forecasted needs. This forward commitment results in meaningful forward price signals that will incent continued operation of economically efficient existing generation, construction of new generation, or participation of load resources in a manner that individually, or in combination, results in the most economically efficient outcome in the marketplace. The forward commitment and price signal is achieved via an RTO/ISO-administered auction to ensure adequate resources on a forward-looking basis, including a reserve margin. The auction determines a single clearing price that resources providing capacity are paid. Load Serving Entities ("LSEs") pay based on a load-ratio allocation of the total capacity payment and the time of year at the time of the capacity obligation. Exhibit A includes a flow chart that illustrates how the RRC works. Exhibit B provides an RRC timeline of events.

Q: HOW IS THE LEVEL OF NEEDED RESOURCES DETERMINED?

A: PJM, with input from the Regional State Committee ("RSC"), would prepare a load forecast to determine the amount of capacity necessary to meet the expected load in the region for the target year (*e.g.*, three years in the future). The time frame between the current year and the target year should be consistent with construction lead times, but may vary depending upon the typical time it takes to plan and construct a new generation resource in the specific region. For purposes of this testimony, I will always reference this timeframe as three years. The level of capacity required to achieve resource adequacy would equal the outcome of a three-year forward load forecast, plus reserve margin requirements, as determined by PJM. The RRC proposal recommends calculating the reserve margin requirement mechanism currently used in the PJM process.

Q: PLEASE DESCRIBE THE RRC AUCTION.

A: PJM would administer an auction to achieve regional resource adequacy for the load forecast three years forward. The auction would procure resources for the entire load forecast, including reserves, and would establish a single market-clearing price. PJM will act as the clearing-house for the resources chosen in the auction. In this role, PJM will arrange for the required capacity for LSEs. As I explain below, this does not preclude any LSE from entering into bilateral contracts for capacity or utilizing its own eligible resources. Permitting PJM to take the administrator role simplifies and centralizes the necessary accounting and record keeping and mitigates significant price risks that would be placed on LSEs. All eligible resources could bid into the auction and the marginal unit—where the supply offered equals the forecast demand—sets the market-clearing price of capacity for delivery 3 years from the time of the auction. A continual annual process for delivery in Year 3 will provide both future and near-term resource adequacy.

Q: WHAT REQUIREMENTS DOES THE RRC PLACE ON RESOURCES?

A: All generators that are designated by PJM as "deliverable" to load within the footprint of PJM may submit bids to offer their available and otherwise uncommitted generation into the RRC auction. Resources outside of PJM could participate if they are able to demonstrate deliverability into PJM and are not otherwise committed to other LSEs outside of the PJM footprint. As is the case today, all resources chosen as a Capacity Resource (and in this case the RRC product) have an obligation to bid into the applicable day-ahead and real-time energy and/or ancillary services markets. The capacity price is determined by the single clearing price derived from an RRC auction administered by the RTO/ISO.

Q: HOW WILL THE CAPACITY PAYMENT BE SETTLED BETWEEN THE LSES AND THE CAPACITY RESOURCES?

A: PJM, through the RRC auction, acts as a clearinghouse for LSEs and arranges for the forecasted resource needs. During the target year (*i.e.*, the year for which the auction arranged for resources), LSEs would pay for capacity based on their actual load ratio share. PJM would allocate the funds to capacity resources that were selected in the auction and that performed as required by the auction rules.

Q: CAN AN LSE SELF-ARRANGE ITS CAPACITY?

A: Yes. LSEs can utilize ownership of Capacity Resources or bilateral purchases or simply pay the market-clearing price of the annual PJM-administered auction for the target year. Self-arranged Capacity Resources are bid through the auction process, thus they carry the same obligations and requirements as other Capacity Resources arranged for through the RRC auction.

Q: ARE LSES REQUIRED TO PURCHASE CAPACITY PRIOR TO THE TARGET YEAR?

A: No. LSEs that do not wish to self-supply their capacity requirement, either using their own resources or bilateral purchases, may simply wait and receive an allocation of the cost of capacity arranged by PJM in the auction.

Q: HOW IS THE CAPACITY PAYMENT TO RESOURCES CHOSEN IN THE RRC AUCTION DETERMINED?

A: Resources chosen in the RRC auction are paid monthly based on the auction-clearing price for each MW taken in the auction, the resource's availability during the month, and the relative value of capacity during the month. While the auction is held three years before the target year, payments to resources taken in the auction would not begin until the target year.

Q: HOW WOULD THE AUCTION COSTS (I.E., PAYMENTS MADE TO RESOURCES) BE COLLECTED FROM CUSTOMERS UNDER RELIANT'S RRC PROPOSAL?

A: The annual cost of the capacity purchased in the auction should be allocated to the individual months of the target year (*i.e.*, Year 3) in a manner that reflects the value of capacity throughout the year. The capacity payment is made to resources following the month for which capacity was made available. The cost is allocated to LSEs based on their actual load ratio share of the region. An illustration of the collection and distribution of funds under the RRC proposal can be found in Exhibit C.

Q: WHEN THE RRC IS INITIALLY ADOPTED, WITH THE FIRST AUCTION FOR CAPACITY THREE YEARS FORWARD, HOW DOES THE RRC ENSURE RESOURCE ADEQUACY DURING THE TRANSITION YEARS?

A: First, it is important to recall that once the RRC is instituted, there will be an annual auction for capacity to be available for delivery three-years forward. In other words, if an auction were held today, the capacity obligation would apply three years from now. The next annual auction, one year from today, would be for a capacity obligation four years from now, and so on. This approach assures resource adequacy each year while eliminating barriers to entry.

Upon initial adoption of the RRC methodology, PJM should hold transition capacity auctions in Year 1 and Year 2 to ensure resource adequacy prior to the first Year 3 forward looking target year. This feature of the RRC design is necessary to ensure resource adequacy for the transition years. An optimal way to approach this short-term procurement would be to hold similar capacity auctions for Year 1 and Year 2 after the auction for Year 3 has been conducted. However, because the shorter construction lead times may serve as a barrier to entry, the price resulting from these auctions should be capped at the auction-clearing price generated by the auction for Year 3.

IV. THE CURRENT PJM CAPACITY MARKET DESIGN

Q: PLEASE DESCRIBE THE CURRENT CAPACITY MARKET IN PJM.

A: The current capacity market in PJM is based on the short-term forward availability of capacity where adequacy is measured on a daily basis. There are capacity auctions for monthly, multi-month and annual capacity in addition to a daily capacity market to provide this day-to-day capacity adequacy. When an owner of generation that PJM has designated as a Capacity Resource declares that resource to satisfy its load plus reserve obligation, that generator then has an obligation to bid into the day ahead and real-time energy market. When needed, PJM has the right to call on this capacity and associated energy to serve the electricity needs of the region.

Q: DOES THE CURRENT CAPACITY MARKET IN PJM ASSURE FORWARD LOOKING RESERVE-BASED RESOURCE ADEQUACY?

A: No. Generally, it takes up to at least three years to develop and construct a new power plant. The current PJM capacity market design only requires load to demonstrate it has procured Capacity Resources on a daily basis and only provides auctions for capacity up to one-year in the future. Thus, the ICAP model does not assure resource adequacy on a forward-looking reserve basis. At best, it is a market mechanism to send price signals that capacity is needed in the short-term with the expectation that the market will respond with new resources. Interestingly, any capacity short signal is so short-term focused that the market has no effective ability to meet the need contemporaneously with the signal. Thus a more explicit model is necessary to assure resource adequacy in the PJM region in forward years.

Moreover, the current PJM design results in an unnecessary boom-and-bust cycle. When supplies diminish the daily prices for capacity rise at or near the price cap level. When supplies are plentiful or even just above the required amount the daily auction prices for capacity have cleared at or near zero. This cycle creates significant volatility in the PJM capacity market. Market participants under the current market design—both new resources and LSEs—have no market certainty for capacity prices over a reasonable forward-looking horizon. This disconnect inhibits the development of robust competitive retail markets due to the uncertainty it creates regarding future capacity costs.

PJM's short-term resource adequacy design also creates the need to consider price caps in the capacity market. The significant barriers to entry described above are prevalent in PJM's current approach. A forward-looking resource adequacy mechanism such as RRC alleviates the need for such administrative intervention.

Q: ARE THERE SUFFICIENT RESOURCES AVAILABLE IN THE PJM REGION TODAY?

A: Generally, yes. In the PJM Market Monitoring Unit's *2002 State of the Market Report*, it was noted that capacity resources in the original PJM region exceeded capacity obligations every day. On average, PJM-West capacity resources exceeded capacity obligations by approximately 1,600 MW after April 1, 2002. This is approximately 19% greater than the average capacity obligation (including reserves) in PJM-West. While it is true that the current PJM market has healthy reserve margins in many parts of the region, this is part of the boom-and-bust cycle described above. Eventually, through a combination of load growth, the exit of inefficient generators, and the cancellation of planned generation in PJM based on price signals in the market today, reserve margins will shrink and new resources will be needed.

Q: SHOULD RESOURCE ADEQUACY BE A PRESSING CONCERN IN THE PJM REGION?

A: Yes. While it is true that the current PJM market has healthy reserve margins in many parts of the region, this is part of the "boom-and-bust" cycle, as described above. A resource adequacy design that successfully supports long-term sustainable markets must be sufficiently forward-looking to dampen the volatility associated with today's boom-and-bust model, eliminate the need for price capping in the capacity market, and provide price certainty. A capacity market design that is not sufficiently forward-looking will resemble only a short-term operating reserve market. A well-designed forward-looking market can provide both short-term and long-term resource adequacy.

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes.

Exhibit A

Exhibit A

Reliant Regional Reliability Commitment Flow Chart

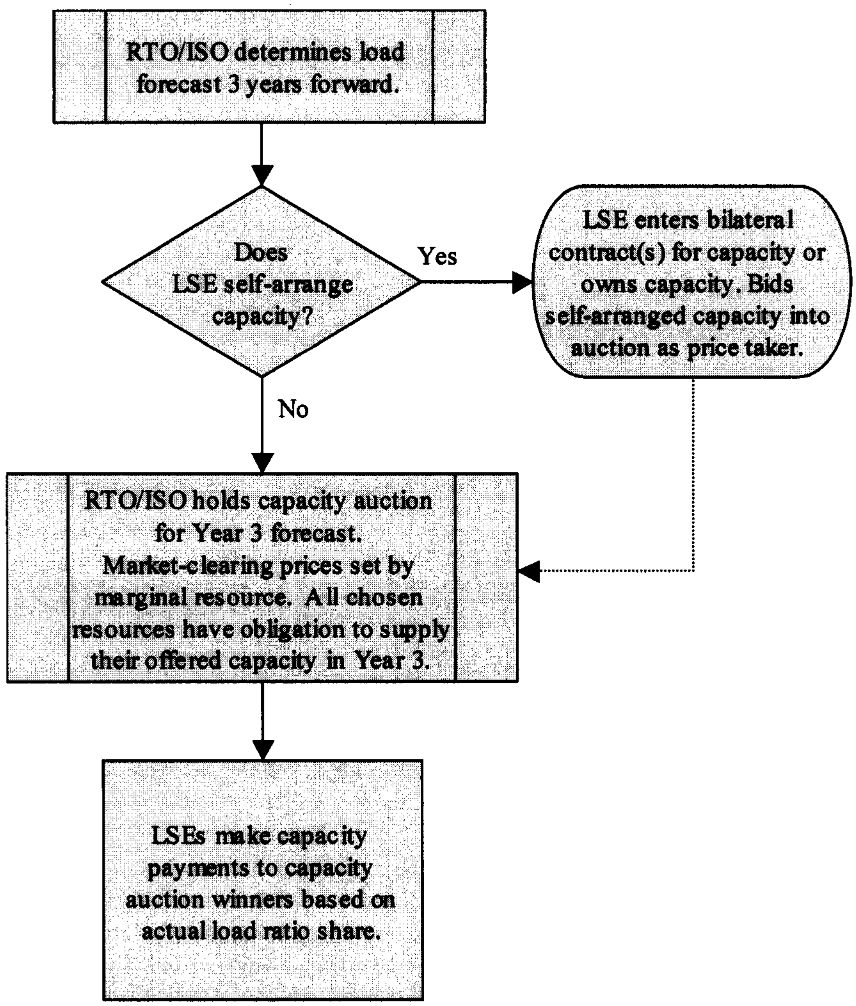

Exhibit B

Exhibit B

Reliant Regional Reliability Commitment Flow Chart

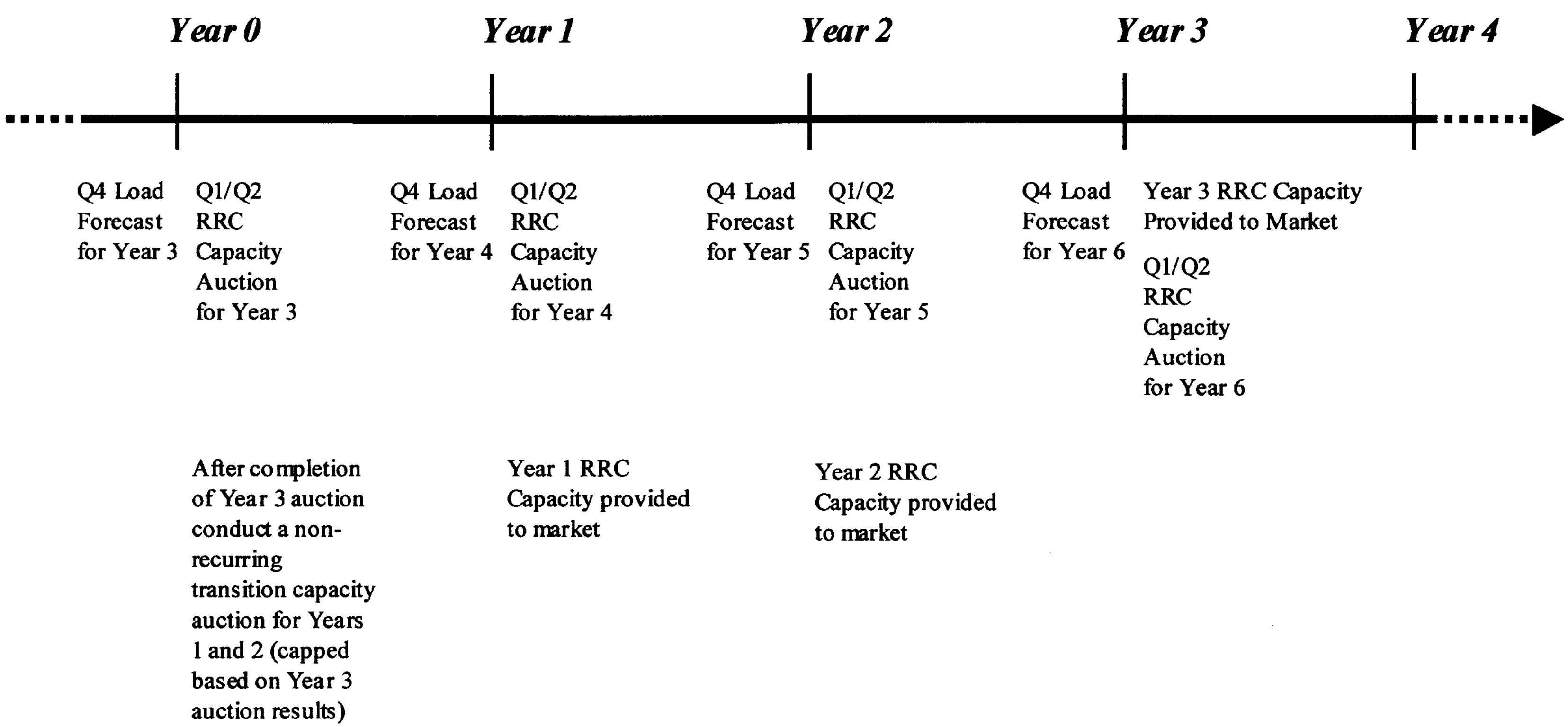

Exhibit C

Reliant Regional Reliability Commitment Auction, Allocation, and Payment

I. A number of resources are available in the market. In the illustration below, there are 2,750 MW of forecasted firm demand and 3,000 MWs of existing available capacity. In this example, the current reserve margin is approximately 9%.

Entity Name		Supply/Demand MW	Bid $/kW-month
GENCO			
	Supply.Unit.G1	200	0.00
New Gen 1			
	Supply.ProposedUnit.NG1.2	125	1.00
Muni			
	Supply.Unit.Muni.1	500	0.00
	Demand.Firm.Muni	400	N/A
IntegratedCo.			
	Supply.Unit.I.1	1,000	0.00
	Supply.Unit.I.2	800	0.50
	Supply.Unit.I.3	500	1.75
	Demand.Firm.I	1,750	N/A
	Demand.Interruptible.I	200	0.90
LSECo.			
	Demand.Firm.LSE	600	N/A
	Demand.Interruptible.LSE	200	0.85
Totals			
	Existing Supply	3,000	
	Demand.Firm	2,750	
	Reserve Margin	9%	

Exhibit C

II. In the RRC Auction, resources bid their capacity. Assuming a 10% reserve margin is desired, the auction must clear 3,025 MWs. Here, the auction-clearing price is $1.00/kW-month.

Market Participants

	Supply/Demand MW	Bid $/kW-month	Cumulative Supply MW	
Supply.Unit.I.3	500	1.75	3,525	
Supply.ProposedUnit.NG1.2	125	1.00	3,025	← Price Clears at $1.00/kW-month
Demand.Interruptible.I	200	0.90	2,900	
Demand.Interruptible.LSE	200	0.85	2,700	
Supply.Unit.I.2	800	0.50	2,500	
Supply.Unit.G1	200	0.00	1,700	
Supply.Unit.Muni.1	500	0.00	1,500	
Supply.Unit.I.1	1,000	0.00	1,000	
Demand.Firm.Muni	400.00	N/A		
Demand.Firm.I	1,750	N/A		
Demand.Firm.LSE	600	N/A		
Demand.Firm	2,750			
Required Auction Amount	3,025	1.1*Demand.Firm		

III. The actual demands and payments for capacity in Year 3 are illustrated below.

Analysis of Auction Implementation

Entity Name	Supply/Demand MW	Bid $/kW-month	Payment Received $	Amount Paid by LSE $	Entity Result $
GENCO					2,400,000
Supply.Unit.G1	200	0.00	2,400,000		
New Gen 1					1,500,000
Supply.ProposedUnit.NG1.2	125	1.00	1,500,000		
Muni					720,000
Supply.Unit.Muni.1	500	0.00	6,000,000		
Demand.Firm.Muni	400	N/A		5,280,000	
IntegratedCo.					900,000
Supply.Unit.I.1	1,000	0.00	12,000,000		
Supply.Unit.I.2	800	0.50	9,600,000		
Supply.Unit.I.3	500	1.75	N/A		
Demand.Firm.I	1,750	N/A		23,100,000	
Demand.Interruptible.I	200	0.90	2,400,000		
LSECo.					(5,520,000)
Demand.Firm.LSE	600	N/A		7,920,000	
Demand.Interruptible.LSE	200	0.85	2,400,000		
Total			**36,300,000**	**36,300,000**	**0**

IV. This final chart demonstrates how the annual capacity payments are parsed and collected from LSEs for a 200 MW capacity obligation.

Monthly Payment Distribution

Month	Loss of Load Probability	Bid $/kW-month	Example of Capacity Payment 200 MW Unit $
January	0.010%	0.137	27,429
February	0.050%	0.686	137,143
March	0.001%	0.014	2,743
April	0.001%	0.014	2,743
May	0.001%	0.014	2,743
June	0.100%	1.371	274,286
July	0.200%	2.743	548,571
August	0.300%	4.114	822,857
September	0.200%	2.743	548,571
October	0.001%	0.014	2,743
November	0.001%	0.014	2,743
December	0.010%	0.137	27,429
Total		1.0	2,400,000